

Political Ecology of Degradation of Forest Common in the Chittagong Hill Tracts of Bangladesh

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Abstract

Tribal communities of Chittagong Hill Tracts (CHT) depend largely on forest commons¹ to fulfill their basic subsistence requirements and cash income. Like many other Asian countries, forest commons of CHT has degraded severely. While in early 19th century entire CHT was covered with dense forest, it is now denuded severely with some scattered trees and shrub and weeds. In the pretext of protecting the forest resources from overexploitation by indigenous people, almost entire forest of CHT was nationalized during the British colonial period. The question arises, why forest commons are undergoing degradation in CHT, while state establish its control over forest resources and rules and regulations were formalized and codified. As per Hardin's (1968) thesis, forest of CHT should not be degraded as property right was given to the state and was defined clearly.

Conventionally indigenous people are blamed for degrading resources through their traditional fallow based swidden cultivation. However, indigenous people were using forests from time immemorial. The resource was not degraded until the external intervention. The history of external intervention in the forest in CHT is more than two centuries old. The process of degradation of forest commons cannot be fully understood without understanding the political and social processes, which condition access, control and management of land and forest resources. By examining the policies during the past two centuries and associated effects on forest commons in CHT, this paper makes an attempt to explain the degradation of forest commons of CHT.

The analysis revealed that the process of degradation of forest commons started during the British colonial period with the nationalization of forest, establishment of reserve forest by denying the customary rights of indigenous people, entrusting the management of forest to bureaucratic departments, weakening the traditional institutions. Before the nationalization, the community had responsibility to conserve forest resources within their jurisdiction. There were community sanctioned and respected rules and norms. The centralized approach of management combined with inefficiency, corruption and indifference of local people resultant from state policy of alienation led most part of the forest common in open access resources, which caused overexploitation of forest resources by both insiders and outsiders. The process of degradation was accelerated through privatization of forest land for sedentary agriculture, which created pressure on forest resources by reducing the availability of common land.

¹ Between 1871 to 1885, the then colonial government declared three-fourths of the land of CHT as government forestland. One fourth of the government forest land (1,345 sq. miles) was declared as reserve forest where rights of indigenous people were restricted and the rest of the government forestland declared Unclassed State Forest (USF), where tribal people's customary rights were allowed. This forest is common forest.

The construction of hydraulic dam on Karnafuli River, which submerged vast area of forest and leasing out of forest common for plantation for supplying industrial raw materials during the Pakistan period have created further pressure on forest resources. The process of degradation was further accentuated by the policies of settlement of lowland people in forest commons of CHT and extension of reserve forest, afforestation programs and leasing out of forest land for rubber plantation to private individuals during the Bangladesh period.

The paper concludes that the degradation forest commons in CHT is not because of the traditional practices of indigenous people. The genesis of degradation rooted to in the past and present policies. Nationalization of lands and forests, creation of reserve forest, entrusting the management of forest on bureaucratic, privatization of forest commons for agriculture, horticulture and rubber plantation, and settlement of lowland people have had severe impact on management of forest resources in CHT. Finding of this study contradicts with Hardin thesis that privatization and state control over forest resources is the only solution for protecting CPRs.

Keywords: Common property resources, Forest degradation, State policies, Tribal communities, Chittagong Hill Tracts, Bangladesh,

1. Introduction

Like many other countries, the Chittagong Hill Tracts (CHT), a hilly region in Bangladesh (Fig.1) has been facing a serious problem of degradation of natural resources particularly land and forest. Four-fifth of the area of the region is characterized by steep slopes. Steep slopes combined with heavy seasonal rainfall (ranges 2032 to 3810 mm) and poor soil structure made most of the land of the region (96%) suitable for tree farming, agro-forestry, horticulture and other perennial crops and pose serious threat to annual cultivation (Forestal, 1966; Brammer, 1986). Although the entire area of CHT was covered with dense forest in the early 19th century; now most of the area has been denuded and covered with obnoxious weeds with some scattered trees and shrub (Roy, 1995; ADB, 2001).

The degradation of forest has affected live of tribal communities who depend largely on forest commons to fulfill their basic subsistence requirements and cash income. In addition to providing fuelwood, fodder, construction materials, medicinal herbs, forest commons provide varieties of food which often help in bridging seasonal food shortages. Yield has declined in many parts in CHT and farmers fail to produce subsistence level of production (Rahman et, al., 1999, Farid, et al. 1990). Most households face food shortage for a period varying from three to six months (CARE, 2000) and have to depend largely on wild food and even face starvation. As a result, poverty, malnutrition and other forms of deprivation are pervasive in the region (UNDP, 1994; Huq, 2000).

Conventionally, tribal people are blamed for destroying the forest and land through practicing traditional agriculture and over-exploitation of forest resources (Schilich, 1875 in Bangladesh District Gazetteers, 1971, Forestal, 1966; Hamid, 1974; Sfeir-younis, 1993). To protect the forest resources from overexploitation by indigenous people, almost entire forest of CHT was nationalized during the British colonial period. The management of these resources was vested with the two central government organizations Forest Department (FD) and Deputy Commissioner (DC), a bureaucratic institution that represents the central government, with full property rights. Rules and regulations were formalized and codified in the Chittagong Hill Tracts Regulation, 1900 and Forest Act, 1927. The question arises, why forest commons are undergoing degradation in CHT, while state establish its control over forest resources and rules and regulations were formalized and codified. As per Hardin's (1968) thesis, which considered establishing state control over CPRs is one of the ways to protect the CPRs from inevitable ruin through overexploitation of resources for individual gain, forest of CHT should not be degraded as property right was given to the state and was defined clearly.

The history of external intervention in the use and management of land and forest in CHT is more than two centuries old. The resource use and management can only be fully understood in relation to the political and social processes, which condition access, control and management of resources (Niemeijer, 1996; Bryant, 1997). Despite growing concern about the degradation of forest resources in CHT (Roy, 1996. Shoaib, 1998; Araya, 2000; Huq, 2000; Gafur, 2001), little effort has been taken to understand their underlying causes particularly effect and impacts of the rule and policies adopted by government on forest common in CHT. Lack of proper understanding of the problems led to technical remedies such as enhancing reserve forest, enacting stringent laws, enhancing policing to protect forest, which further

exacerbating the situation. By examining the policies during the past two centuries and associated effects on forest commons in CHT, this paper makes an attempt to provide an alternative explanation for degradation of forest commons in CHT.

2. Study Area and Data

The Chittagong Hill Tracts (CHT) region is located in southeast Bangladesh between latitudes 21.25° and 23.45° north, and between longitudes 91.45° and 92.50° east (Fig. 1). With an area of 5,089 square miles, the region covers about one-tenth of Bangladesh's land area, and is surrounded by India to the north and east, Myanmar to the southeast, Chittagong district to the west and Cox's Bazar to the southwest. Two-thirds of the area is characterized by steep slopes; the remaining area has an undulating topography. Steep slopes combined with heavy seasonal rainfall (in the range of 2032 – 3810 mm) impose serious limits on arable agriculture. A soil and land use survey conducted in 1966 found that 73% of the land of CHT is suitable only for forest, 15% for horticulture, and only three percent for intensive terraced agriculture (Forestal, 1966; Brammer, 1986). Twelve ethnic groups (Mongoloids), known as 'tribes,' comprise more than half of the total population. The other people are Bengalis, who migrated to the area from the neighboring plain region.

This study is based on information from both secondary and primary sources. Information on various periods of CHT is drawn mainly from secondary sources, including colonial reports, official documents (i.e. gazetteers and official correspondence), diaries of colonial administrators and travelers, books, journals, and censuses. This information was supplemented by information from primary sources, including a field visit conducted between January and July 2004, discussion with elderly persons, group discussions and key informant interviews.

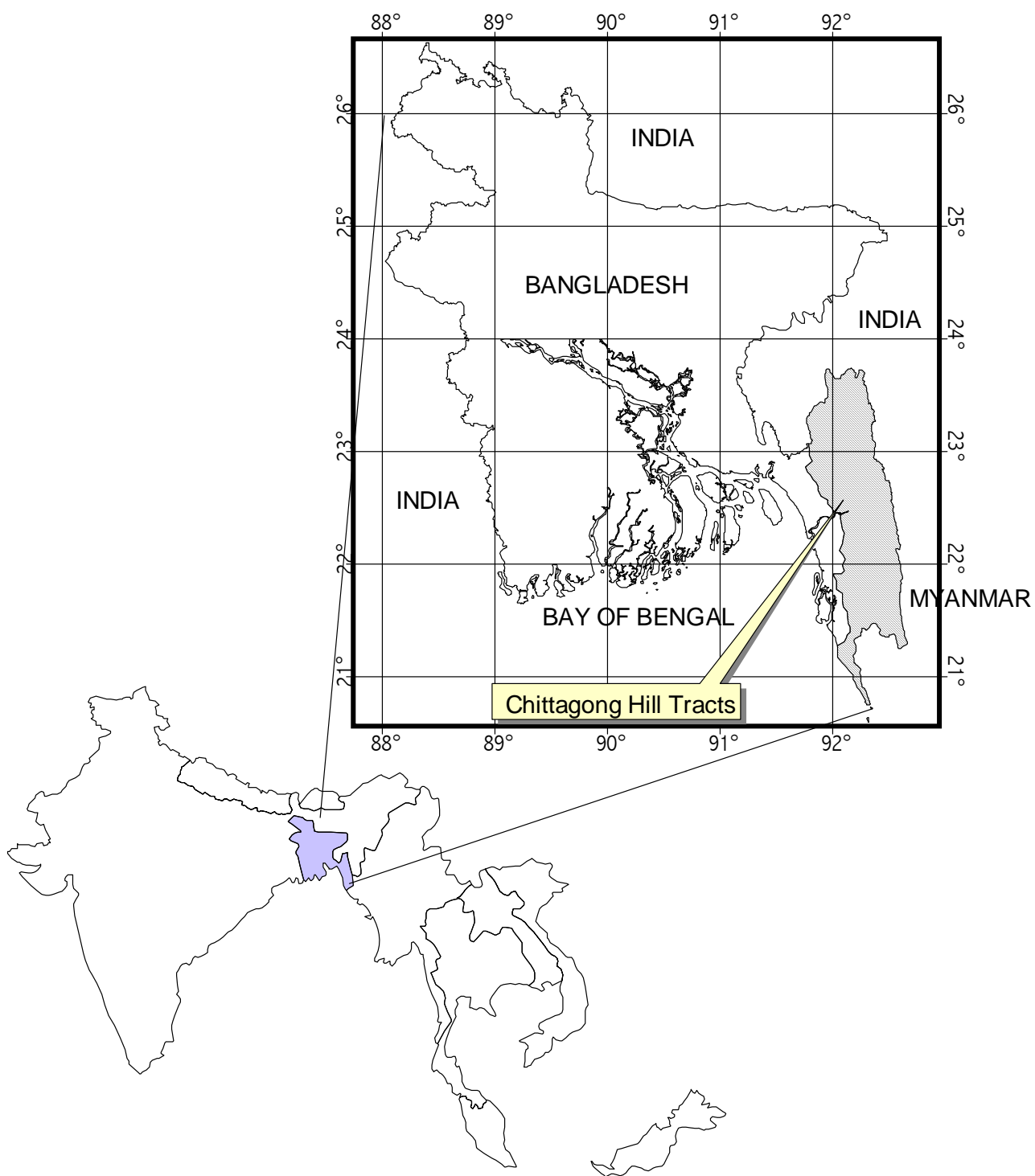


Figure 1: Study Area, Chittagong Hill Tracts of Bangladesh

3. National Laws and Policies and their Impacts on Forest Commons

Bangladesh evolved through a long process of political and administrative changes extending over a period of several centuries. As part of greater India, comprising also present day India and Pakistan, Bangladesh was colonized by Britain from 1760 until 1947. Following independence from colonial rule, Bangladesh became a part of Pakistan and remained so until its emergence as an independent nation in 1971. Land and forest policies adopted during different politico-administrative periods have had a direct bearing on forest commons in CHT. This section analyzes how changes in policies and laws have influenced status and condition of forest in CHT. It begins with an analysis of the situation in the pre-colonial period, followed by that of the British colonial period and finally that of the post-colonial period (Pakistan and Bangladesh).

3.1 Forest Commons during the Pre-colonial Period (Before 1760)

Before the colonial period (1760), forests and land were the common property of a clan or a village in tribal society. The concept of land rights for the hill people of CHT was based on customs and usages, and was held in common by the community as a whole. While individuals who were member of the community had specific rights of uses, the community as a whole used to exercise the rights of access and use of common lands (Roy, 1996:25-28). Individual rights included the right to a particular jum; the right to sufficient land for a home, the right to extract resources including forest produces, the right to hunt and fish, and the right to graze cattle on common lands. However, once a particular land was no longer in use e.g. an old jum, or abandoned house, then the land reverted to the community (Roy, 1996:25-28).

During that period the CHT was covered with dense forest with valuable trees (Lewin, 1869). Clearing a patch of forest or shrub lands by slashing-and-burning, growing assorted varieties of crops in the same plot for one or two years, and then moving to another plot was the typical mode of agricultural land use. Settlements were also temporary, small and isolated, as shifting cultivators used to move from one place to another when fertility of farm plots declined at the place where they had settled. Large forest relatively small population combined with little opportunity for commercial use of forest products helped to maintain good forest condition.

3.2 Forest Commons during British Colonial Period (1760-1947)

The CHT came under British colonial rule in 1760, when the last Mughal governor Mir Quasim Ali Khan surrendered to the East India Company, hereafter referred to as Company, and it continued until 1947. From 1760 to 1860, like other parts of the then colonized India, it was ruled by the East India Company, hereafter referred to as Company, as the representative of the British Government. The Company administration did not make any direct intervention in policy and administrative matters in CHT (Serajuddin, 1971), and largely followed a policy of exclusion and isolation (Barua, 2001). They used to collect from tribal Chiefs through Bengali middlemen.

In 1857, the British Government took over the direct administration of the Indian colonies from the East India Company, and in 1860 the hills of Chittagong district were designated a separate district, known as the Chittagong Hill Tracts (Mohsin, 1997).

Immediately after taking over the direct administration of CHT from the Company, the colonial government made attempt to maximize the revenue from forest. To this end, they established state control over forest resources by declaring almost entire CHT as government forestland in 1871. Between 1871 to 1885, the British colonial government declared three-fourths of the land of CHT as government forestland and remaining area, except some privately owned land obtained through leasehold or freehold, declared as '*khas*' land (government owned fallow land, where nobody has property rights). One fourth of the government forest land (1,345 m²) was declared as reserve forest (RF) where any rights of indigenous people including collection of fuelwood, fodder and jhuming were totally denied. The rest of the government forestland declared Unclassed State Forest (USF). Management of reserve forest was totally vested with the Forest Department (FD) and management of Khas land and USF land was vested with Deputy Commissioner (DC), a bureaucratic institution that represent the central government². The DC was given the absolute powers over land matters (Bangladesh District Gazetteers, 1971, Roy, 2002).

Moreover the forest was opened for commercial exploitation. They encouraged the extraction of forest produces and invite Bengali wood traders to extract timber from forest; elephants were used to carry timber from inaccessible areas. The annual average revenue derived from the licenses to remove forest produce and tolls increased substantially after 1871 (Table 1). While during 1862-71 annual average revenue from forest products were 11 thousands, in 1872-73 it increased more than four times and increased in a progressive rate for few succeeding years.

Table 1 Annual average revenue from licenses and tools from forest products

Year	Average annual income in Rupees	Annual increase of income in %
1862-71	11,000	
1872-73	45,000	400
1873-74	58,000	127
1874-75	102,000	178

Source: Khan, 1998. Figures are rounded to thousands.

The process was further intensified by the industrial need of British particularly developing railway network. Lewin (1870) reported:

Throughout the whole (CHT) district are found large tracts of valuable forest trees.... A large trade in railway sleepers has lately sprung up from the port of Chittagong; the Port Conservator estimates that upwards of 30 000 sleepers have been exported during the last two years (cited in Mohsin, 1997:90)

² Section 7 of Chittagong Hill Tracts Regulation, 1900 states, "Chittagong Hill Tracts to be district under the Deputy Commissioner. The Chittagong Hill Tracts shall constitute a district for the purpose, the Deputy Commissioner shall be the District Magistrate, and subject to any orders passed by the Local Government under section 6, the general administration of the said Tracts, in criminal, civil, revenue and all other matters shall be vested in the Deputy Commissioner".

The indiscriminate exploitation of forest produces, inappropriate extraction method, lack of management of forest resources combined with shifting cultivation depleted the forest resources. While in 1869 Lewin reported good forest condition rich in valuable trees, in 1875, Schilich, 1875 in BDG CHT, 1971) found that forest resources were degraded substantially and many important trees such as *Jarul* (*Lagerstroemia spp.*), *Toon* (*Cendrcia toona*) were disappeared from accessible area. He apprehended that within a short period supply of good timber trees would be inadequate. In response to emerging crisis, teak seeds were imported from Myanmar and planted in some parts of CHT for commercial timber production. As a result, some parts of natural forest have been replaced by teak monoculture.

Shifting cultivators were blamed for degradation of forest resources. To control shifting cultivation and promote sedentary agriculture, land leases were provided with inheritable rights for plough cultivation. Valley dwelling tribal communities such as the Chakma, Marma, and Tripura gradually started adopting individual ownership in valley land.

In order to establish full control over local people, the British administration also took measures to reform the traditional institutions in 1892 and traditional village system was replaced by Mouza system headed by a headman (Ascoli, 1918, CHT Regulation, 1900). Before the introduction of Mouza system, two types of traditional institutions were functioning in the CHT. In Chakma circle, under chief, there was *dewan* head of a gozas or septs (clan) and under *dewan* there were *khijas* in every village. In Bhomomg circle, under Chief, there was *roaja* in every village. Villagers used to choose Roaja and concerned tribe members used to choose dewan was chosen by. Both the systems were based on principle of selection of local leader by local people (Ascoli, 1918: 92-93). Replacing the democratic system, the selection of mouza headmen (later it become hereditary, like chief) was given to the hand of chief and final appointment to the government, which eventually made the system weak and ineffective as headmen had no accountability to the people, rather his loyalty was to the chief and the government, which affect the management of forest resources.

3.3 Forest Commons during Post-colonial Period

Although post colonial governments pursued the colonial land and forest policies almost entirely, this period witnessed intensification of resource use largely due to large development interventions such as construction of hydraulic dam and their policies encouraging migration of lowland people to the CHT which affected the forest condition of CHT. For convenience of discussions, the post-colonial era can be divided into periods: Pakistan period, which was largely characterized by intensification of resource use for industrial purpose, and Bangladesh period, largely characterized by large scale migration of lowland people which created serious pressure on land and forest resources and thereby affected their sustainable uses.

3.3.1 Forest Commons during Pakistan Period (1947-1970)

As regards the use and management of forest resources, Pakistan government followed the British policy of commercial extraction as well as started industrial use of forest produces. It created a new government agency, Forest Industries Development Corporation (FIDC), which introduced new methods of logging that facilitated the extraction of timber from areas previously thought inaccessible. To utilize the local raw materials such as bamboo and trees having low economic value, paper, rayon, timber, pulp, plywood, and match manufacturing industries were established in the CHT (Rahman, 1998). As a result extraction of forest

resources increased substantially particularly bamboo and soft wood trees, which previously were not extracted due to their low economic value.

The establishment of industries could not have made any positive impact on the economic condition of tribal people as they just got the wage of cutting and carrying these materials to the nearest stream point. A large number of Bengali itinerant traders engaged as sub-contractors to collect these materials and supplied to the main suppliers of these industries. Besides, both professional staff and workers were hired from outside the CHT and thus could not generate non-farm employment opportunities for local people (Rahman, 1998). Following the path of colonial government they created another type of forest called 'protected forest' where shifting cultivation and other indigenous use right was restricted. Consequently, pressure on land increased.

To meet the increased demand for electricity for industry and urban areas, the government constructed a hydroelectric project at Kaptai on Karnafuli river in the early sixties. The reservoir, created by the dam, inundated about 22, 000 ha land (about 40% best arable land of the CHT) and displaced about 100, 000 population. Some of the affected people, who had permanent land titles, were rehabilitated in the reserve forests.

Having no other alternatives, some of the shifting cultivators encroached into the reserve forest. In this process, major portion of Kasalong, Sitapahar, and Reinkhyong reserve forests were destroyed. A study funded by Asian Development Bank reported that 65% of the Reinkhyong reserve forest had been destroyed by jumias coming into the area. Farmers who encroached into the reserve forest became more marginalized and vulnerable due to both physical and social isolation as well as lack of tenural security. As in the reserve forest, no customary right was recognized and they were under constant threat of eviction by Forest Department.

The pressure on forest was further reinforced by the government policy of encouraging lowland people to migrate to the CHT. Some migrants from India were settled in CHT during the early 1950s. Subsequently, in 1960s government abolished the special status of CHT, in the name of integration of the region to the mainstream of the country, which facilitated the entry of lowland people into CHT. As a result, only in one decade, Bengali population increased about five times in the CHT, from 26, 000 in 1951 to 119,000 in 1961 (Table 2).

In order to facilitate the collection of raw materials some road networks were developed in this period, which connected the main growth centers of the district as well as developed road connection with Chittagong and Cox's Bazar two important business centers of the region. The road network facilitated the extraction of forest products and trade flow and thereby intensified the use of forest resources. Over exploitation of forest resources, combined with repeated slash-and-burn for shifting cultivation without adopting effective management practices led to severe degradation of forest resources (Forestal, 1966; Ishaq, 1971:113).

Table 2 Population in CHT

Year	Population	Non-tribal	Population density in per mile
1760			
1872	63, 054*	381	9
1881	101,597	N/a	-
1891	107,286	N/a	-
1901	124,762	4962	24
1951	287,274	25,736 (9)	57
1961	385,079	119,375 (31)	75
1974	508,199	135,673 (27)	100
1981	746,026	304,252 (41)	147
1991	974,445	473,301 (49)	190

*Hunter, 1876: 35-37 (cited from census of 1872)

Note: figures in parentheses are percentage

3.3.2 Land use During Bangladesh Period (After 1971)

Bangladesh inherited degraded forest in CHT from Pakistan regime due to overexploitation and long negligence of management of forest resources. Almost entire USF and most of the accessible area of reserve forest have been denuded. With an intention to conserve the remaining forest, immediately after independence Bangladesh government banned extraction of timber from reserve forest. Soon after that imposed high tariff value on import of timber due to shortage of foreign currency. Banning of timber combined with high import duty on timber led to serious crisis of timber and corresponding price hike by several times (Huq, 2000).

Large profit provided a strong incentive to large-scale thefting and smuggling of forest produces. Despite ban on timber extraction, influential businessmen in collaboration with FD and other concerned officials started illegal felling of the remaining forest (Master Plan, 1993; Huq, 2000:80). To control this illegal felling, the government further tightened the regulatory and punitive measures following the path of British and Pakistan governments. Extraction and transit regulations concerning timber from privately owned lands were made stricter (Roy, 2002); because in many cases, the permits for the private plantations were used as a cover to smuggle out stolen timber from government forests. Despite great potential of tree production in the CHT (Forestal, 1966), no measures have been taken to increase timber production by encouraging tree plantation by private individuals and improving the management of forest resources by mustering support from local people.

Price hike, which provided financial incentives for tree farming by smallholders were largely inhibited by tenural insecurity, as most of the smallholder did not have secured land title. Farmer who had secured land title and access to road facilities positively responded to price hike and started tree farming. However, their initiatives were largely thwarted by the complicated transit rules³ (Roy, 2002), which demanded permission from concerned officials with detail specification of trees to be transported for selling from privately owned land. Bureaucratic machinery, who involved in the process of giving permit, made the process so complicated that it was hardly possible for any smallholders tree growers to obtain a permit as

3 For details see Chittagong Hill Tracts Forest Transit Rules, 1973, and subsequent government order no 16/2000/147, Ministry of Environment and Forestry date 16 March 2000. This rule is applicable to remove any tree from reserve forest, protected forest, USF and private land.

it required lot of money and persuasions (Huq, 2000). Without considering money, it is not even feasible for them to obtain permit as it takes much time. Most of the time smallholders have to sell small quantity of two or three trees to meet their immediate family needs. As a result, smallholder tree growers are compelled to sell their trees to tree traders (mainly Bengali) at a much lower price than the market price, which discouraged them from adopting large scale tree plantation.

Villagers reported that they get a small fraction of the actual market price of timber. Table 3 shows the ratio of local prices to regional prices of some timber species, which indicates the price farmers received as farmgate price. Farmgate price is lower than the local price since carrying cost is incurred. Timber traders association and local villagers reported that on an average Tk. 300/cft or more is spent in the process of obtaining permission of transit, passing all the check posts and to reach to Chittagong. Although the distance between Chittagong and the hill districts Bandarban, Khagrachari & Rangamati is 100 to 150 km and connected by metaled road; average transport cost is Tk. 2-3/cft that does not explain such a large variation in price between CHT and Chittagong. The lack of credit facilities also restricts tree production by smallholder as they cannot wait for long time to get return, and no formal credit facilities are available⁴. During the field visit it was found that many small holders are selling their immature standing trees to tree traders at a very low price due to immediate need of money with a condition that after fixed period determined during the negotiation the buyer will remove trees.

Table 3 Ratio of local prices to regional prices at Chittagong city

Name of trees	Local price Bandarban, Khagrachari & Rangamati Tk/cft	Price at Chittagong Tk/cft	Local price share of Chittagong price (%)
Segun	200	800	25
Mehogani	150	500	30
Gamar	120	450	27
Chaplish	110	400	28
Koroi	100	400	25
Simul, kadam & other soft woods	70-80	300-350	25
Pole	30-50	200-250	23

Source: Rasul, 2005

Villagers' assertions are supported by the price difference in timbers between CHT and Chittagong (Table 3).

All these factors combinedly led to further depletion of forest resources both in terms of quantity and quality. Table 4 shows the depletion of forest resources of the two largest reserve forests Kasalong and Rankhiang in the CHT. Another reserve forest Sitpahar is degraded to such an extent that Forestry Master Plan (1993) recommended de-reserving this forest.

⁴ Although Bangladesh Krishi Bank and other government banks provide credit to farmers, who have secured land title, but for tree crops no credit is available as government policy is focused mainly on annual crops rather than on perennial or long term tree crops.

At the end of 1970s Bangladesh government took settlement programs to settle lowland people in CHT and about 25,000 Bengali families were resettled in CHT (Barua, 2001), considering its low population density. As a result, in 1991 population density of CHT reached to 190 per sq. km. In addition to that in 1992, government declared about 50,000 ha as reserve forest and 4,000 ha lands were leased out for rubber plantation⁵ to private entrepreneurs for promotion of rubber plantation, most of whom were outsiders (Mohsin, 1997). Migration of low land people, expansion of reserve forest and land leasing out of for rubber plantation and other purposes led to not only the acute shortage of land and forest but also caused severe environmental, economic and social problems.

Most of the migrated people were settled in so called *khas* land⁶ i.e. government-owned fallow land. But, in reality these were community lands and indigenous people were using these lands for generations. As tribal people were not familiar with formal land title and official formalities, few tribal people have obtained formal land title. As a result, many tribal people were evicted from their land. This sharpened their feeling of insecurity, which affected their investment in land such as tree planting or any other long-term investment. Therefore the continued traditional agricultural practices, cultivation of cereal crops on hill slopes by slash-and-burn method, affected the environment and livelihoods of the tribal people. Due to repeated burning in many areas of the CHT natural forest species have been replaced by low growing bush, shrub vegetation and hardy grasses which is an indication of land degradation (Arya, 2000).

Table 4 Area and Stock Volume of Kassalong and Rankhiang Reserve forest in CHT

	Forest types	cover	1963		1983		1991	
			Area (ha)	Volume (000m ³)	Area (ha)	Volume (000m ³)	Area (ha)	Volume (000m ³)
Kassalong	Timber		52,689	7,002	46,395	6,338	41,393	5,954
	Timber-bamboo		23,506	2,818	14,878	1,679	11,832	1,336
	Bamboo-timber		31,972	1,726	23,525	1,270	23,525	1,270
	Bamboo		41,366	714	12,653	219	12,653	219
	Sub-total		149,533	12,260	97,451	9,506	89,403	8,779
	Non-forest & non-products area		9,981	-	52,667	-	47,600	-
Rankhiang	Timber		20,325	3,256	7,116	1220	1,167	200
	Timber-bamboo		6,933	988	3,228	394	3,228	394
	Bamboo-timber		17519	809	6194	286	6198	286
	Bamboo		27907	563	13606	275	13606	275
	Sub-total		381,731	5,616	277,713	2175	250,605	1155
	Non-forest & non-products		2,409		38,087		33,296	

⁵ Most of these areas are denuded as most of the leaseholder are outsider mainly influential Bengali people, who do not have knowledge or interest on rubber plantation. They have taken lease just to capture the public land with a speculation that in future it will be very valuable and useful to borrow money from bank with low interest rate in the name of rubber plantation (Gain, 1998; Mohsin, 1997).

⁶ "What the government regards khas land is essentially hill people's traditional jum land and forest land. The concept of khas land is anathema to jumma notions of land ownerships. For the jumma people this land is common property, belonging to the community and kinship groups" (Barua, 2001:94).

area

Source: Forest Statistics of Bangladesh, 2000.

Table 5 Evolution forest management in different era

Important Era	Major policy changes	Consequence	Major land use
Pre-colonial period (Before 1760)	Arrangement of free trade with lowland Bengali people with annual tribute of cotton to Mughal govt.	Limited exchange with barter system	<ul style="list-style-type: none"> Dense forest with valuable trees, bamboos and cane Entirely subsistence based shifting cultivation Almost closed self-sufficient economy, with negligible transaction through barter system
Colonial era (1760- 1947)	<p>Introduction of private ownership & providing land lease for settled agriculture</p> <p>Nationalization of land & forest</p> <p>Declaration of reserve forest</p> <p>Land laws are formalized</p> <p>Commercial extraction of timber</p> <p>Increased linkage with lowland</p>	<p>Availability of CPR land & forest decreased</p> <p>Jhum cycle reduced</p> <p>Settled agriculture & plough cultivation gradually adopted</p> <p>Access to & use of forest resources restricted</p> <p>Management of RF vested with FD</p> <p>Land management vested on DC</p> <p>Private ownership of land emerged</p> <p>Formal govt. bureaucracy replaced the traditional institutions</p> <p>Traditional management practices institutions eroded</p> <p>Increased monetization</p>	<ul style="list-style-type: none"> Conflict with local people Settled agriculture is gradually adopted in valley land Shifting cultivation practiced in sloping land Limited cash crop with subsistence crops Cotton, oilseeds, India-rubber are exported Forest resources depleted In certain areas natural forest replaced by teak monoculture
Post- colonial era			
Pakistan period (1947-1970)	<p>Encouraged migration of lowland people,</p> <p>Abolish special status of CHT</p> <p>Construction of hydroelectric project</p> <p>Improve road networks</p> <p>Industrial use of forest products</p>	<p>Started migration of lowland people</p> <p>Submerged vast area under water</p> <p>Displaced large number of people</p> <p>Create pressure on land resources</p> <p>Govt. initiated horticulture project</p> <p>Increased extraction of forest products for industrial purposes</p>	<ul style="list-style-type: none"> Intensify land use Shortened <i>jhum</i> cycle Number of <i>jhumia</i> increased <i>Jhum</i> expanded to more fragile & marginal land Encroachment in reserve forest Degradation of forest resources Introduce horticulture as cash crops Subsistence based SC with limited cash crops
Bangladesh Period Since 1971	<p>Planned settlement</p> <p>Afforestation program</p> <p>Privatization of CPR for rubber plantation</p>	<p>Increase population pressure</p> <p>Create further pressure on forest resources</p> <p>Armed conflicting between</p> <p>Intensification of land use</p> <p>Commercial cultivation of horticulture & root crops</p>	<ul style="list-style-type: none"> Commercial cultivation of horticulture, vegetables & root crops Jhum cycle further reduced Subsistence based SC with limited cash crops Agroforestry & commercial tree farming started in selected areas

4. Conclusion and Discussion

Forest resources in CHT, particularly CPR are gradually shrinking both in quantity and quality. The analyses reveal that genesis of degradation of land and forest resources in CHT are rooted in the past and present policies. It started during the British colonial period with the nationalization of land and forest, and large-scale commercial logging. It was accelerated by the establishment of reserve forests which abolished tribal people's customary rights, and alienated from the management of forest resources. The centralized bureaucratic management combined with inefficiency, corruption and indifference to local people resultant from state policy of alienation led most part of the forest common in open access resources. As there is no incentive to preserve open access resources and to invest in the planting of trees and other land improvements, as benefits arising from efforts accrue do not accrue exclusively to particular individual or community led to the degradation of forest resources. The process was reinforced by through privatization of forest land for sedentary agriculture and alienation of local people from management of forest resources.

Forest Department, created for management of RF during the British period, considered local people "as heinous enemies of forest" from its inception and local people were systematically alienated from its management and their needs were totally ignored in planning and management of forest (Khan, 1998:165). Consequently, from the very beginning an unfriendly relationship developed between FD and local people, which was an impediment for management of forest resources. For instance, in 1870s when FD started planting teak (seeds imported from Burma) in some parts of CHT it faced public opposition. Because, although teak has a good economic value, under teak no other trees or shrubs grow and its leaves cannot be used for any useful purposes. As a result, it affected the livelihoods of people living in and around the teak forest and they made efforts to stop growing teak; they even did mischief at night to the young plants (Ghani, 1955 in Khan, 1998:165).

Without considering the need of local people FD strengthened their staff and increased patrolling and policing to protect forest. In 1905-6, FD filed 120 cases involving 1,059 persons for forest offense (Khan, 1998). This management approach continued in entire colonial period. The Forest Act of 1927 provided more power to the government to form reserved and protected forest and increase regulatory and punitive measures concerning forest offences including cattle grazing, forest settlement, local rights, etc.

The post-colonial governments both Pakistan and Bangladesh pursued the same approach and management practices and further expanded state control, restricted local rights and adopted more stringent rule enforcement. Pakistan period witnessed two forest policies, one in 1955 and another in 1962. Both the forest policies followed the colonial policies with a provision of expansion of government forest and managing all forests through rigid departmental plan (Khan, 1998:171). Local people's needs and rights remained as ignored as before. Pakistan government further created another type of forest called 'protected forest', where also local people's use right were restricted. Following the British policy, Pakistan governments also continued plantation of teak and enhanced the extraction of forest resources by introducing mechanical extraction method and establishing local raw material based industry as emphasized in Forest Policy, 1962. Commercial concern got priority over people's need in all forest policies and programs as pointed out by Hussain.

The management of forests to be intensified to make it a commercial concern, utilization of forest produce was to be improved,...regeneration speeded up to keep pace with increased harvesting, ... primarily to produce industrial wood to be included ... and timber harvesting in Chittagong and Sundarbans was to be accelerated (in Hussain, 1992:18).

Bangladesh also followed the colonial policy as far as forest management and local people's access were concerned. After independence of Bangladesh, two national forest policies were announced one in 1979 and another in 1994. Although forest policy, 1994 for the first time recognized the necessity of participation of local people and private initiative in afforestation program⁷, it did not provide enough incentive and mechanism for participation of local people. Instead of mustering support from local people in protecting and managing forest resources, government further enhancing regulatory and punitive measures. In a survey in Rangamati district of CHT found that about 70% of the criminal cases in the magistrate's courts of the district in 1998 is concerned with forest related offences (Roy, 2002:140), which not only developed strain relationships between FD and local communities but also created mistrust that inhibited sound management of forest resources. As a result potential for effective management of forest resources with active participation of local people as happened in neighboring countries like Nepal and India remained unutilized.

Findings of the study show that establishing state control over CPR resources and enacting stringent rules and regulations is not enough for sustainable management of forest and other renewable natural resources. Like CHT, in other areas where customary rights of local people were superseded for better management of resources but failed to protect the resources. For example forests were nationalized in Nepal in 1957, but it accelerated the deforestation (Bromely and Chapagain, 1984; Pandit & Thapa, 2003:283). Similar experiences happened in Senegal where community-owned lands were nationalized in 1964 to protect from overgrazing, but it could not protect (Grafton, 2000).

It is now increasingly realized that common property resources can not be managed properly without active involvement of people depending on those resources. Following the policies pursued by neighboring countries in devolving authorities to local people in management of common property forest resources, government of Bangladesh should design appropriate mechanism to involve local people in forest management and devolve authorities to them with necessary support for sustainable use and management of forest commons in CHT of Bangladesh.

⁷ "Massive afforestation program in the denuded hilly areas of Unclassed State Forest areas of Rangamati, Khagrachari and Bandarban will be undertaken under the auspices of the government and private initiatives. The participation and rehabilitation of the local Jhum cultivators will be ensured while implementing this program" (National Forest Policy, 1994).

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